Amendments to the Specification:

Please replace the paragraph beginning at page 9, line 11, with the following amended paragraph:

More specifically, mRNAs may first be prepared from a cell, tissue, or organ (e.g., organs such as the lungs, liver, kidney, etc. or from an embryo) in which the protein of the invention is expressed. Known methods can be used to isolate mRNAs; for instance, total RNA is prepared by guanidine ultracentrifugation (Chirgwin et al., Biochemistry 18:5294-5299, 1979) or AGPC method (Chomczynski et al., Anal. Biochem. 162:156-159, 1987), and mRNA is purified from total RNA using an mRNA Purification Kit (Pharmacia), and such. Alternatively, mRNA may be directly purified by the ~~QuickPrep~~ QUICKPREP™ mRNA Purification Kit (Pharmacia).

Please replace the paragraph beginning at page 9, line 18, with the following amended paragraph:

The obtained mRNA is used to synthesize cDNA using reverse transcriptase. cDNA may be synthesized by using a kit such as the AMV Reverse Transcriptase First-strand cDNA Synthesis Kit (Seikagaku Kogyo). Alternatively, cDNA may be synthesized and amplified following the 5'-RACE method (Frohman et al., Proc. Natl. Acad. Sci. USA 85:8998-9002, 1988; Belyavsky et al., Nucleic Acids Res. 17:2919-2932, 1989), using the synthesized DNA as a primer, the ~~5'-Ampli FINDER RACE~~ 5'-AMPLI FINDER RACE™ Kit (Clontech), and polymerase chain reaction (PCR).

Please replace the paragraph beginning at page 11, line 26, with the following amended paragraph:

When *E. coli* is used as the host cell, any vector can be used as long as it comprises an "ori", to amplify and mass-produce the vector in *E. coli* (e.g., JM109, DH5α, HB101, or XL1Blue), and a marker gene for selecting the transformed *E. coli* (e.g., a drug-resistant gene selected by a drug (e.g., ampicillin, tetracycline, kanamycin, or chloramphenicol). For example, M13-series vectors, pUC-series vectors, pBR322, pBluescript, pCR-Script, and such, can be

used. Other than the vectors used above, pGEM-T, pDIRECT, pT7, and so on, can also be used for subcloning and excision of the cDNA. When using a vector to produce the protein of the present invention, an expression vector is especially useful. When, for example, the objective is to be expressed in *E. coli*, the expression vector should have the above characteristics in order to be amplified in *E. coli*. When *E. coli*, such as JM109, DH5α, HB101, or XL1 Blue, are used as the host cell, the vector should have a promoter, for example, lacZ promoter (Ward et al., Nature 341:544-546, 1989; FASEB J. 6:2422-2427, 1992), araB promoter (Better et al., Science 240:1041-1043, 1988), or T7 promoter, that can efficiently promote the expression of the desired gene in *E. coli*. Other examples of the vectors are pGEX-5X-1 (Pharmacia), ~~"QIAexpress system"~~ QIAEXPRESS® system (Qiagen), pEGFP, and pET (for this vector, BL21, a strain expressing T7 RNA polymerase, is preferably used as the host).

Please replace the paragraph beginning at page 20, line 1, with the following amended paragraph:

A column used in affinity chromatography is exemplified by protein A column or protein G column. For example, protein A column includes ~~Hyper D~~ HYPER D™, ~~POROS~~ POROS™, and ~~Sepharose~~ SEPHAROSE™ F. F. (Pharmacia).

Please replace the paragraph beginning at page 20, line 10, with the following amended paragraph:

For example, the determination of absorbance, Enzyme-linked immunosorbent assay (ELISA), enzyme immunoassay (EIA), radioimmunoassay (RIA), and/or immunofluorescence may be used to measure the antigen binding activity of the antibody of the invention. In ELISA, the antibody of the present invention is immobilized on a plate, protein of the invention is applied to the plate, and then a sample containing a desired antibody, such as culture supernatant of antibody producing cells or purified antibodies, is applied. Then, a secondary antibody, which recognizes the primary antibody and which is labeled with an enzyme such as alkaline phosphatase, is applied, and the plate is incubated. After washing, an enzyme substrate, such as

p-nitrophenyl phosphate, is added to the plate, and the absorbance is measured to evaluate the antigen binding activity of the sample. A fragment of the protein, such as a C-terminal or N-terminal fragment, may also be used. ~~BIAcore~~ BIACORE® (Pharmacia) may be used to evaluate the activity of the antibody according to the present invention.

Please replace the paragraph beginning at page 25, line 18, with the following amended paragraph:

In addition, other embodiments of the screening method of the present invention include methods that use a two-hybrid system using cells (such as the "~~MATCHMAKER~~ MATCHMAKER™ Two-Hybrid System", "Mammalian ~~MATCHMAKER~~ MATCHMAKER™ Two-Hybrid Assay Kit", and "~~MATCHMAKER~~ MATCHMAKER™ One-Hybrid System" (all by Clontech), the "~~HybriZAP~~ HYBRIZAP™ Two-Hybrid Vector System" (Stratagene), and the "~~Cyto Trap~~ CYTO TRAP™ two-hybrid system" (Stratagene); References: Dalton et al., Cell 68:597-612, 1992; Fields et al., Trends. Genet. 10:286-292, 1994).

Please replace the paragraph beginning at page 26, line 15, with the following amended paragraph:

In the present invention, a biosensor utilizing the surface plasmon resonance phenomena can be used as means for detecting or determining bound compounds. Biosensors using surface plasmon resonance phenomena allow real-time observation of the interaction between the protein of the present invention and a test compound as a surface plasmon resonance signal using a trace amount of the protein and without labeling (for example, ~~BIAcore or Pharmacia~~ BIACORE® (Pharmacia)). Thus, using a ~~BIAcore~~ BIACORE® or other biosensor allows one to evaluate the binding between the protein of the present invention and a test compound.

Please replace the paragraph beginning at page 29, line 15, with the following amended paragraph:

The AGM region was sampled from 11.5-day mice embryos, and polyA(+) RNA was prepared using ~~Fast Track~~ FAST TRACK® (Invitrogen). Double-strand cDNA was synthesized using a random primer of the ~~Superscript~~ SUPERSCRIPT™ Choice System (GIBCO BRL). BstXI adapter (Invitrogen) was added after blunting the ends of the cDNA, and then 400 bp or longer cDNA were fractionated using the SizeSep 400 Spun Column (Pharmacia)

Please replace the paragraph beginning at page 29, line 20, with the following amended paragraph:

After the cDNA was mixed with pMXGM(-)v-mplM2 (see Japanese Patent Application No. Hei 9-324912), which had been treated with BstX1 (TAKARA) beforehand, it was ligated using T4 DNA ligase. The resulting DNA was introduced into *E. coli* DH10B (GIBCO BRL) by electroporation using ~~Gene Pulser~~ GENE PULSER® (BioRad), and cultured overnight. The cDNA library was purified using the ~~JETstar~~ JETSTAR™ column (GENOMED)

Please replace the paragraph beginning at page 29, line 25, with the following amended paragraph:

Packaging cells BOSC23 (Proc. Natl. Acad. Sci. USA 90:8392-8396, 1993) were transfected with the cDNA library using ~~LipofectAMINE~~ LIPOFECTAMINE™ (LIFE TECHNOLOGIES). BOSC23 were seeded into a 6-cm dish with DMEM (LIFE TECHNOLOGIES) containing 10% fetal calf serum (FCS, JRH BIOSCIENCES), and then washed with DMEM 16 hours later. 18 μl of ~~LipofectAMINE~~ LIPOFECTAMINE™ diluted beforehand with 200 μl of DMEM and 3 μg of the cDNA library diluted with 200 μl of DMEM were mixed together. This was kept standing at room temperature for 15 minutes, then 1.6 ml of DMEM was added thereto, and the mixture was added to the cells. After five hours, 2 ml of DMEM containing 20% FCS was added to the mixture and cultured for 19 hours. Subsequently, the medium was replaced with 3 ml of DMEM containing 10% FCS and the culture supernatant was collected 24 hours later. Mouse interleukin-3 (IL-3) and 10 μg/ml of hexadimethrine bromide were added to the culture supernatant containing the recombinant virus, and Ba/F3 were

suspended for infection. 24 hours after the infection, the cells were washed three times with PBS, and further cultured with RPMI1640 (LIFE TECHNOLOGIES) containing 10% FCS. DNA was extracted from clones that proliferated in the absence of IL-3 and amplified by PCR using primers 5'-gggggTggACCATCCTCTA-3' (SEQ ID NO:3) and 5'-CgCgCAgCTgTAAACggTAg-3' (SEQ ID NO:4), designed to surround the cDNA insertion site, followed by recovery of the cDNA fragment. PCR was performed under the following conditions with the ~~GeneAmp~~ GENEAMP® PCR System 2400 (~~Perkin Elmer~~ Applied Biosystems) using 50 µl of the reaction mixture containing 500 ng of DNA, 500 pM each of primer, 2.5 units of ~~TaKaRa LA Taq~~ TAKARA LA ™ Taq (TAKARA), 2.5 mM $MgCl_2$, 0.3 mM dNTPs, and enzyme-supplemented buffer: denaturing at 98°C for 60 seconds, followed by 30 cycles of 98°C for 20 seconds, and 68°C for 120 seconds. The PCR reaction product was electrophoresed on an agarose gel, the portion containing the amplified fragment was excised, and then purified. The nucleotide sequence of the resulting DNA fragment was determined and translated to amino acids, then the isolated gene (clone 106) was found to be 33% homologous at the amino acid level with the Drosophila twisted gastrulation gene (TSG) (Mason et al., Genes and Develop. 8:1489-1501) (FIG. 1). Drosophila TSG gene is thought to be one of the embryonic dorsal determining factors, and the mutation of this gene prevents differentiation of only dorsal midline cells derived from the mesoderm. This is considerably different to the decapentaplegic (DP) gene, which is also a dorsal determining factor considered to interact with TSG gene, where the differentiation of the entire dorsal region is affected.

Please replace the paragraph beginning at page 30, line 29, with the following amended paragraph:

A cDNA library of a 11.5 day- mouse embryo was synthesized in the same manner as in Example 1 using an oligo dT primer and screened using the cDNA fragment as the probe to obtain the full-length cDNA. 2 µg of the cDNA library was added to 50 µl of DH5α (GIBCO BRL) and left standing for 30 minutes on ice. After applying heat shock for 30 seconds at 42°C, the mixture was allowed to stand for about 2 minutes on ice. After the addition of 300 µl of

SOC, the mixture was cultured for 30 minutes at 37°C. The mixture was then seeded into a 10-cm dish LB plate (containing ampicillin) on which a ~~NitroBind~~ NITROBIND™ Nitrocellulose Transfer membrane (MICRON SEPARATIONS) was placed so as to obtain 30,000-40,000 *E. coli* colonies per plate. The *E. coli* colonies that proliferated on the membrane were transferred to a ~~Biodyne~~ BIODYNE® A transfer membrane (Pall), and cultivated on the LB plate for several hours. The ~~Biodyne~~ BIODYNE® A transfer membrane was then used for screening the cDNA library. After denaturing with a denaturing solution (0.5 N NaOH and 0.5 M NaCl) for five minutes, the membrane was neutralized with a neutralizing solution (0.5 M Tris-HCl, pH 7.4 and 1.5 M NaCl). After gently washing with 2x SSC and drying up, the DNA and membrane were cross-linked by irradiating with UV light at 1200 J.

Please replace the paragraph beginning at page 31, line 13, with the following amended paragraph:

Hybridization was performed according to the following procedure. First, the membrane was pre-hybridized for 2 hours at 42°C in a hybridization buffer (50% formamide, 4.5% Dextran Sulfate, 0.1 mg/ml of salmon sperm DNA, 6x SSC, and 1% SDS). After labeling with RI using ~~Prime-It~~ PRIME-IT® (Stratagene) and after heat denaturing , 25 ng of clone 106 DNA to be used for the probe was added to the hybridization buffer and left to stand overnight.